

1 *Sub A* 1. In a database management system that includes a database engine that
2 accesses and updates objects in a database, the database engine receiving high-level
3 document commands, each high-level document command for performing an operation on
4 a document that is associated with a plurality of tables in the database, a method for
5 allowing client applications to control how a particular high-level document command is
6 implemented in the database, the method comprising the following:

an act of receiving a high-level document command meeting certain criteria;

an act of identifying one or more client applications that are to be notified of the implementation of the high-level document command;

an act of notifying the one or more identified client applications that a high-level document command meeting the certain criteria has been received;

an act of receiving instructions from the one or more client applications on how to affect the implementation of the high-level document command in the database; and

an act of following the received instructions when implementing the high-level document command, or not implementing the high-level document command at all if the received instructions so indicate.

19 ~~501~~ 2. The method in accordance with Claim 1, wherein the received instructions
20 are for performing additional high-level document commands in addition to the received
21 high-level document command.

1 3. The method in accordance with Claim 2, wherein the additional high-level
2 document commands and the received high-level document command are implemented
3 atomically in the database.

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5 4. The method in accordance with Claim 3, wherein the additional high-level
6 document command and the received high-level document command are implemented
7 atomically using a group operation.

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10 A2)5. The method in accordance with Claim 1, wherein the received instructions
11 are for changing how the high-level document command is to be implemented in the
12 database.

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14 6. The method in accordance with Claim 1, wherein the received instructions
15 are for preventing the high-level document command from being implemented at all in the
16 database.

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18 7. The method in accordance with Claim 1, wherein the high-level document
19 command is for performing an operation on an electronic mail message.

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21 8. The method in accordance with Claim 1, wherein the high-level document
22 command is for performing an operation on a folder that contains electronic mail
23 messages.

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1 *Sub A3* 9. The method in accordance with Claim 1, wherein the high-level document
2 command is for moving a document.

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4 10. The method in accordance with Claim 1, wherein the high-level document
5 command is for deleting a document.

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7 11. The method in accordance with Claim 1, wherein the high-level document
8 command is for copying a document.

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10 12. The method in accordance with Claim 1, wherein the high-level document
11 command is for updating a document.

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13 13. The method in accordance with Claim 1, wherein the high-level document
14 command is for adding a document.

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16 14. The method in accordance with Claim 1, wherein the act of notifying the
17 one or more identified client applications comprises an act of transmitting a message to a
18 machine that hosts the client application, the machine that host the client application being
19 different than the machine that hosts the database management system.

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21 15. The method in accordance with Claim 1, wherein the act of notifying the
22 one or more identified client applications comprises an act of passing the notification
23 through a function call to the identified client application, the client application hosted by

1 the same machine as at least the portion of the database management system responsible
2 for performing the act of notifying the client applications.

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4 16. The method in accordance with Claim 1, wherein the act of receiving
5 instructions from the one or more client applications occurs prior to the act of receiving the
6 high-level document command.

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1 *Sw A4* 17. In a database management system that includes a database engine that
2 accesses and updates objects in a database, the database engine receiving high-level
3 document commands, each high-level document command for performing an operation on
4 a document that is associated with a plurality of tables in the database, a method for
5 allowing client applications to control how a particular high-level document command is
6 implemented in the database, the method comprising the following:

an act of receiving a high-level document command meeting certain criteria;

and

a step for allowing one or more client applications to affect how the received high-level document command is to be implemented, if at all, in the database.

18. The method in accordance with Claim 17, wherein the step for allowing one or more client applications to affect how the received high-level document command is to be implemented comprises the following:

an act of identifying one or more client applications that are to be notified of the implementation of the high-level document command;

an act of notifying the one or more identified client applications that a high-level document command meeting certain criteria has been received;

an act of receiving instructions from the one or more client applications on how to affect the implementation of the high-level document command in the database; and

1 an act of following the received instructions when implementing the high-
2 level document command, or not implementing the high-level document command
3 at all if the received instructions so indicate.
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1 19. A computer program product for use in a database management system that
2 includes a database engine that accesses and updates objects in a database, the database
3 engine receiving high-level document commands, each high-level document command for
4 performing an operation on a document that is associated with a plurality of tables in the
5 database, a computer program product for implementing a method for allowing client
6 applications to control how a particular high-level document command is implemented in
7 the database, the computer-program product comprising a computer-readable medium that
8 contains computer-executable instructions for performing the following:

9 an act of detecting the receipt of a high-level document command meeting
10 certain criteria;

11 an act of identifying one or more client applications that are to be notified
12 of the implementation of the high-level document command;

13 an act of causing the one or more identified client applications to be notified
14 that a high-level document command meeting certain criteria has been received;

15 an act of detecting the receipt of instructions from the one or more client
16 applications on how to affect the implementation of the high-level document
17 command in the database; and

18 an act of following the received instructions when implementing the high-
19 level document command, or not implementing the high-level document command
20 at all if the received instructions so indicate.

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22 20. The computer program product in accordance with Claim 19, wherein the
23 computer-executable instructions for performing the act of following the received

1 instructions comprise computer-executable instructions for performing additional high-
2 level document commands in addition to the received high level document command.
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4 *Sub A5* 21. The computer program product in accordance with Claim 20, wherein the
5 computer-executable instructions for performing additional high-level document
6 commands comprise computer-executable instructions for atomically implementing the
7 additional high-level document commands and the received high-level document command
8 in the database.

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10 22. The computer program product in accordance with Claim 19, wherein the
11 computer-executable instructions for performing the act of causing the one or more
12 identified client applications to be notified comprise computer-executable instructions for
13 performing an act of causing a message to be transmitted to a machine that hosts the client
14 application, the machine that host the client application being different than the machine
15 that hosts the database management system.

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17 23. The computer program product in accordance with Claim 19, wherein the
18 computer-executable instructions for performing the act of causing the one or more
19 identified client applications to be notified comprise computer-executable instructions for
20 performing an act of passing the notification through a function call to the identified client
21 application, the client application hosted by the same machine as the computer-executable
22 instructions for performing the act of causing the one or more identified client applications
23 to be notified.

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1 24. The computer program product in accordance with Claim 19, wherein the
2 computer-readable media comprises one or more physical storage media.
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A6* 25. A database management system for implementing high-level document
2 commands for performing an operation on a document, each document being associated
3 with a plurality of tables in an underlying database, the database management system
4 comprising:
5 a database application that is configured to send high-level document
6 commands;
7 a notification component that is configured to send a notification to any
8 identified client application when a given high-level document command is
9 received by the database management system;
10 an instruction receiver module that is configured to receive instructions
11 from the notified third party application on how to implement the high-level
12 document command; and
13 a database engine configured to follow the received instructions when
14 implementing the high-level document command.

1 26. In a client computer system that hosts a client application, a method of
2 allowing the client application to influence how a high-level document command is
3 implemented by a database management system in a database, regardless of whether the
4 database is locally or remotely located, the method comprising the following:

5 an act of receiving a notification that a high-level document command
6 meeting certain criteria has been received in the database management system; and
7 an act of dispatching instructions on how to implement the high-level
8 document command.

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